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PENSOFT

Distribution of *Nemipterus marginatus* (Valenciennes, 1830) (Nemipteridae, Perciformes) in the estuary and coastal areas of North Central, Vietnam

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Abstract

We provide data on morphological characteristics and the distribution of the nemipterid fish *Nemipterus marginatus* (Valenciennes, 1830) in the estuary and coastal area of Thanh Hoa province, North Central Vietnam. This is also a clear location record for the distribution of this species in the North Central region compared to previous studies, and a new record for the study area.

Keywords

Nemipterid fish, new distribution, Thanh Hoa province

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Introduction

Species of the genus *Nemipterus* (Nemipteridae) compose an important group of commercial fishes in Vietnam. About 25 species of *Nemipterus* have been described (FishBase 2021), of which 12 species have been recognized in Vietnam coastal waters (Le et al. 2012), including: *Nemipterus bathybius* (Snyder, 1911), *N. celebicus* (Bleeker, 1854), *N. furcosus* (Valenciennes, 1830), *N. hexodon* (Quoy & Gaimard, 1824), *N. japonicus* (Bloch, 1791), *N. marginatus* (Valenciennes, 1830), *N. nematophorus* (Bleeker, 1853), *N. nemurus* (Bleeker, 1857), *N. peronii* (Valenciennes, 1830), *N. tambuloides* (Bleeker, 1853), *N. virgatus* (Houttuyn, 1782), and *N. zysron* (Bleeker, 1857). In Vietnam, *N. marginatus* has been recorded in the South and South-Central regions (Dinh and Phan 2010; Le et al. 2012). Nguyen et al. (1995) also confirmed its distribution in the north but gave no specific location. During specimen collection in the estuary and coastal areas of Thanh Hoa province, we found specimens of *N. marginatus*, which represent records for the study area.

Methods

Fieldwork was conducted in August 2020 in the coastal area of Hai Binh commune, Nghi Son town, and October 2021 in Hoi estuary of the Ma river, Sam Son town,

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Thanh Hoa province, Vietnam (Fig. 1). Specimens were preserved and deposited at the Animal Laboratory, Hong Duc University; 16 specimens were examined. The technical terms and measurements follow the description by Russell (1990). The abbreviations: total length (TL), standard length (SL), pre dorsal length (PDL), post dorsal length (PDL1), head length (HL), post orbital length (POL), snout length (SnL), eye diameter (ED), Interorbital distance (ID), Body depth (BD), caudal peduncle length (CPL); dorsal fin rays (DF), pectoral fin rays (PF), ventral fin rays (VF), anal fin rays (AF), caudal fin rays (CF), and number lateral-line scale (Ll). Field numbers are abbreviated: LB (for specimens collected in Lach Bang estuary, Hai Binh commune), CH (for specimens collected in Hoi estuary).

Results

***Nemipterus marginatus* (Valenciennes, 1830)**

New records. VIETNAM – **Thanh Hoa Province** • Nghi Son town, Hai Binh commune, Hai Binh fishing port; 19°24′N, 105°46′E; 10.VIII.2020; Le Thi Ha, Nguyen Thi Ly, specimens collected from fishermens' boats; 15 spec., sex indeterminate, LB.001, LB.002, LB.003, LB.004, LB.005, LB.006, LB.007, LB.008, LB.009, LB.010, LB.011 (Fig. 2), LB.012, LB.013, LB.014, LB.015 • Sam Son town, Hoi estuary of the Ma river, Hoi fishing port; 19°46′N, 105°53′E; 22.X.2021; Dao Thi Hong, specimen collected from fishermens' boats fishing in the estuary area; 1 spec., sex indeterminate, CH.75.

Identification. Our specimens agree well with the description of the species by Russell (1990): body depth 3.43–3.91 in standard length; mouth oblique, maxillary extending to the anterior border of eye, snout length 0.63–0.92 in diameter of eye; eye medium-sized, diameter of eye 3.3–4.06 in head length, and 1.09–1.59 in snout length; lower margin of eye above a line from tip of snout to upper of pectoral fin; interorbital width 1.08–1.96 in eye; suborbital depth 1.7–1.9 in eye diameter; pectoral fins long, 0.86–1.33 in head length, extending to between level of anus and origin of anal fin; pelvic reaching to first or second anal rays; caudal fin forked, upper lobe produced into a short filament, filament length 11.6–33.0 mm; teeth in both the lower and upper jaw, 4 or 5 pairs of small canines in front of the upper jaw.

Morphometrics: dorsal fin X, 9; anal fin III, 7; pectoral fin 2, 15–16; pelvic fin I, 5; caudal fin 17–18; lateral-line scales 50–53. Ratios: SL/BD = 3.64 (3.43–3.91), SL/HL = 3.70 (3.33–4.06), SL/PDL= 3.06 (2.69–3.33), SL/PDL1 = 1.20 (1.15–1.23), SL/CPL = 6.98 (6.50–8.65). HL/SnL = 3.03 (2.52–3.36), HL/ED = 3.78 (3.3–4.32), HL/POL = 1.62 (1.44–1.83), HL/ID = 5.79 (3.92–7.2) ID. SnL/POL = 0.54 (0,47–0,61), SnL/ED = 1.26 (1.09–1.59). ID/ED = 0,68 (0.51–0.93).

Colour: body rosy dorsally and on upper half of flanks, belly silvery; head with a narrow yellow stripe from below nostrils to eye and another yellow stripe from the front part of upper jaw to eye; a broad yellow-orange band divided above the pectoral fin, along body from below origin of lateral line to the upper part of the

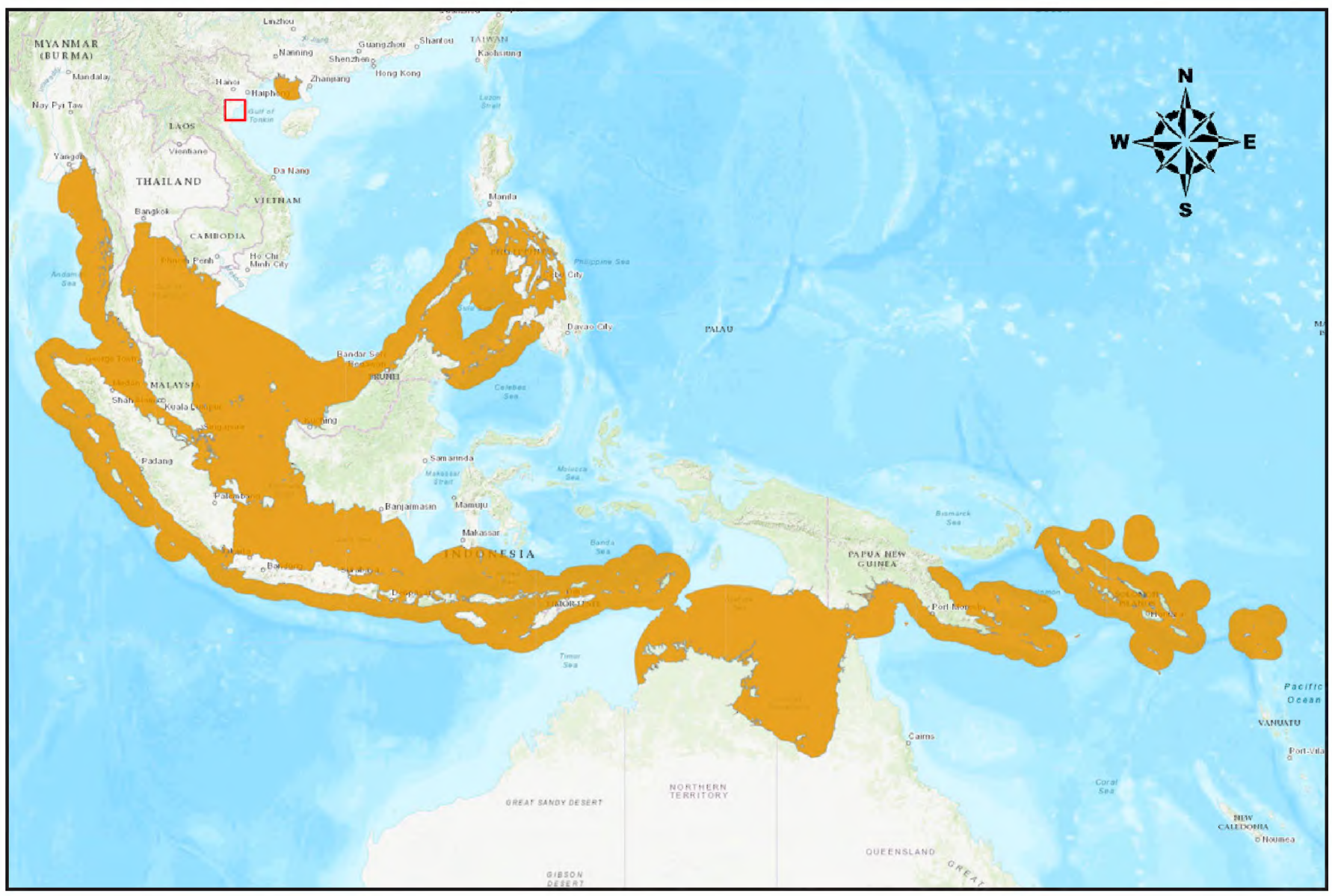

Figure 1. Distribution of *Nemipterus marginatus*. The yellow area is distribution of this species according to IUCN (2019). The red square is new records.

Figure 2. *Nemipterus marginatus* from the coast of North Central Vietnam (LB.005). Scale bar = 1 cm.

caudal peduncle; a second broad yellow band from above the base of the pectoral fin to the lower part of caudal peduncle; dorsal fin with a yellow to orange margin, and broad yellow median band; anal fin with two narrow yellow bands; pelvic fins pink; pectoral fins translucent; caudal fin pink, including filament on the upper lobe.

Discussion

The specimens collected from Thanh Hoa province, Vietnam agree well with the description of *Nemipterus marginatus* by Russell (1990) and Ping et al. (2011) (Table 1).

Russell (1990, 2001) reported maximum size of *Nemipterus marginatus* as 150 mm SL, commonly 130 mm SL; but specimens we collected ranged in size to 180 mm SL (TL 245 mm, LB.001).

Nemipterus marginatus is distributed in the western Pacific, including the South China Sea, Strait of Malacca, southern coasts of Sumatra and Java, northern Australia, the Gulf of Papua, and the Solomon Islands (Russell 1990, 2001; IUCN 2019). Ping et al. (2011) recorded this species on the southern coast of China. In Vietnam, a report by Nguyen et al. (2014) in the Hoi estuary of Ma river, Thanh Hoa Province, recorded 115 fish species belonging to 38 families and 13 orders; similarly, Duong Quang Ngoc (2007) recorded 263 fish species, 58 families, and 14 orders in research on the fish fauna of the Ma river basin in Vietnam. However, no species of the family Nemipteridae were recorded in either of these studies. Thus, the research results here have added a new record on the distribution of *N. marginatus* for the estuary and coastal areas of Thanh Hoa province, Vietnam.

Table 1. Comparison of *Nemipterus marginatus* specimens from Vietnam with the descriptions by Russell (1990) and Ping et al. (2011)

Character	Vietnam	Russell 1990	Ping et al. 2011
Dorsal fin count	X, 9	X, 9	X, 9
Anal fin count	III, 7	III, 7	III, 7
Canines	Small, recurved canines anteriorly in upper jaw		
Standard length/body depth	3.4–3.9	3.1–3.8	3.5–3.9
Head length/eye	3.3–4.3	3.4–4.3	3.3–3.6
Head length/pectoral fin	0.9–1.3	0.9–1.3	0.9–1.0
Head length/pelvic fin	0.9–1.5	0.9–1.3	1.1–1.3
Eye/ interorbital width	1.1–2.0	1.5–2.2	1.1–1.7
Eye/suborbital width	1.7–1.9	1.0–2.6	1.0–1.3
Eye/snout length	0.6–0.9	0.8–1.4	0.9–1.0

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Authors' Contributions

Data curation: HNT. Formal analysis: TTT, LTH, NTL, DTH. Methodology: HNT, TTT. Supervision: HNT. Writing – original draft: TTT. Writing – review and editing: HNT.

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